

IN THE CLAIMS:

Please cancel Claims 1 through 3 without prejudice to or disclaimer of the subject matter recited therein.

Please amend Claims 4 to 10 and 12, and add new Claims 13 to 17, as follows. A marked-up copy of the claims, showing the changes made thereto, is attached. For the Examiner's convenience, all of the pending claims are provided below.

4. (Amended) A diffractive optical element according to Claim 14, wherein the diffractive surface and the alignment mark are adapted to transmit light rays of the first and second wavelengths.

al 5. (Amended) A diffractive optical element according to Claim 14, wherein the diffractive surface and the alignment mark are adapted to reflect light rays of the first and second wavelengths.

6. (Amended) A diffractive optical element according to Claim 13, wherein the diffractive surface comprises binary optics, and wherein the diffractive surface and the alignment mark are formed in accordance with a lithographic process.

7. (Amended) A diffractive optical element according to Claim 13, further comprising a substrate on which the diffractive surface and the alignment mark are formed, and a metal ring for holding the substrate.

8. (Amended) A diffractive optical element according to Claim 14, further comprising a metal ring, wherein the alignment mark is placed at a center of the diffractive surface, and wherein the alignment mark is disposed at a central position of an outside circumference of the metal ring.

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9. (Amended) A diffractive optical element according to Claim 8, wherein the alignment mark and the central position of the metal ring are aligned with each other, on the basis of detection of the alignment mark by use of the light of the second wavelength.

10. (Amended) A projection optical system including a diffractive optical element as recited in Claim 13.

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11. A projection exposure apparatus for projecting a pattern onto a substrate by use of a projection optical system as recited in Claim 10.

Q3
12. (Amended) A device manufacturing method, comprising the steps of:
exposing a substrate with a device pattern, projected from an exposure apparatus having a diffractive optical element, the diffractive optical element including (i) a diffractive surface for diffracting light of a predetermined first wavelength, and (ii) an alignment mark positioned within the diffractive surface and being arranged to produce a

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phase difference corresponding to a multiple, by an integral number, of the wavelength of
light transmitted or reflected by the alignment mark; and
developing the exposed substrate.

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--13. (New) A diffractive optical element, comprising:
a diffractive surface for diffracting light of a predetermined first
wavelength; and
an alignment mark positioned within the diffractive surface and being
arranged to produce a phase difference corresponding to a multiple, by an integral number,
of the wavelength of light transmitted or reflected by the alignment mark.

14. (New) A diffractive optical element according to Claim 13, wherein the
alignment mark is arranged so that, when illuminated by light of a second wavelength, the
alignment mark produces, in a reflected or transmitted light ray therefrom, a phase
difference not corresponding to a multiple, by an integral number, of the second
wavelength.

15. (New) A diffractive optical element according to Claim 13, wherein the
alignment mark is disposed substantially at the center of the diffractive surface.

16. (New) A diffractive optical element according to Claim 13, wherein the
alignment mark is defined by a recess formed on the diffractive surface.